

ECON 4999S

Health and Education Economics
Department of Economics
Hong Kong University of Science and Technology

Fall 2022

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Department of Economics

Office: LSK 6007

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Lectures: Tuesday and Thursday 9:00am – 10:20am (LSK 1033)

Office hour: Friday 12:45pm-1:45pm

Teaching Assistant: Jeremy To, ecjeremy@ust.hk

Office hours: TBA

1. Course Overview

This course has two objectives: 1) To explore how Economics can be used to understand health and education, and 2) to provide tools and skills to evaluate program and policy in this field. It will start with a review of economic tools to evaluate impacts of programs and policies: micro-econometrics including OLS, IV approach, diff-in-diff estimation, and regression discontinuity design. Rest of the course will focus on recent empirical papers on health and education economics.

2. Recommended Prerequisite

Introductory Econometrics (ECON 3334) or similar course is recommended (not mandatory).

3. Student Learning Outcomes

1) To develop cognitive skill: Evaluate and compare differing social scientific perspectives on health and education issues around world (SILO 1, 3, 4, and 6).

2) To evaluate current health and education policies: Critically assess existing policies on health and education, and develop empirical and cost/benefit tools to evaluate their impacts. (SILO 1, 3, 4, and 6).

3) To apply evaluation skills to policies: Perform data analysis using Excel and Stata. (SILO 1, 3, 4, 6, and 7).

4) To create professional writing skills: Write reaction papers for an academic audience (SILO 1, 2, 3, 4, and 6).

5) To develop interpersonal skills: Present, discuss, evaluate and defend supplemental readings in front of a large group (SILO 1, 2, 3, 4, and 6).

4. Course Website

All course materials and announcements will be posted on CANVAS: <http://canvas.ust.hk>. You should visit CANVAS frequently to receive the latest announcement, obtain class material and verify your grading record.

5. Course Requirement and Grades

1) Reading and Reaction papers (10%: 5% each)

You will be expected to write reaction papers. (max two pages, single, font size 11) The primary focus of the course will be on reading and working through articles published or suitable for major economics journals. The syllabus lists papers in each session.

The content of these notes is somewhat open: you can 1) summarize in a paragraph the core contention of the paper, 2) critique key aspects of the results, and 3) discuss strengths or weaknesses you saw in the paper, gaps you identified, or ideas/extensions that occurred to you during reading. You should submit the paper before class starts and it cannot be handed in late. For all required primary literature, please come to class prepared to discuss your answers to the following questions.

**** Guide for Critical Reading:** As you read primary literature for this course, it will be helpful to address the following questions to understand the purpose, design, conclusions and limitations of studies.

1. What type of study design was used?
2. What were the investigators' study aims and/or hypotheses?
3. What was the exposure of interest and how was it measured?
4. What was the outcome of interest and how was it measured?
5. What methods were used to measure the association of interest?
6. Were there any potential confounders in this study? If so, what were they, and how did the investigators adjust for these in the study?

7. Were there any biases in this study? If so, what were they?
8. What were the conclusions from this study? Are they valid?
9. What were the limitations of this study?
10. Based on these findings, what study might you do next? (This can be a study to address a new question, or a study to address the same question in a better way.)
11. What are the potential public health policy implications of these findings?

2) Econometrics Homework (10%: 5% each) 21 Sep and 10 Oct

There will be an econometrics homework.

3) Journal Replication Practices (10%) 18 Nov

You will replicate tables and figures from two research papers using STATA. A guideline and data will be posted at course webpage.

4) Journal Presentation (10%)

You will be assigned for in class journal presentation. You may select articles in the reading list. Presentation will be around 30 min including Q&A and discussion. Presentation slides must be no longer than 20. I encourage you to drop by my office at office hour to ask questions on assigned paper for the presentation.

5) Exam 1 (15%) – Oct 13 (class time)

The exam 1 will ask about empirical estimation strategy (econometrics).

6) Exam 2 (30%) – Nov 22 (class time)

The exam 2 is cumulative. It covers entire course including econometrics part.

7) Research Proposal (10%)

Your group (max 3 people) will write about 10 page research proposal displaying original ideas (Font size 11, Line spacing: 1.5). It will contain 1) description of public policy, 2) literature review, 3) identification strategy, 4) data, and 5) outcome variables. Research questions have to be directly linked to the topics we will cover in the course. You have to submit research proposal and presentation slides to CANVAS. Late proposal will not be accepted. Proposals will be presented in the class, and you could get some feedback. At the end of the proposal, please submit each person's contribution to the project (i.e. Student A: 40%, Student B: 30%, and Student C: 30%), and this will be reflected in the final score. Final individual scores will also be calculated in the following way: $\text{your group score} * \{100 + (\text{your contribution rate} - \text{average contribution rate})\} / 100$. For example, your group score is 80, you have 3 people in your group, and your

contribution is 40%, then you will get 85.35 ($=80 * (100+40-33.3)/100$). Deadline is 5 Dec.

8) Class participation (5%)

I will randomly check a class attendance throughout the semester. If you attend, you will get one credit. I will also give credit for your class participation.

Schedule

(*subject to change. Check your email and course webpage for updates)

Week 1. Introduction

Introduction

Week 2-7. Econometrics Review (10 Lectures)

Causality and Randomized Experiment

OLS

Multivariate Regression

Omitted Variable Bias

Interactions and log

Critical Assessment of Empirical Studies

Assessing Social Experiments

Difference in Differences

Fixed Effect Model

Instrumental Variables

Regression Discontinuity Design

Exam 1 (Oct 13 – Class time, 9:00-10:20am)

Week 8-9. Health (5 Sessions)

[Articles] – will be modified

- Kim, Hyuncheol Bryant, et al. "Male Circumcision, Peer Effects and Risk Compensation." (2018).
- Kim, Hyuncheol Bryant, Belyou Haile, and Taewha Lee. "Promotion and Persistence of HIV Testing and HIV/AIDS Knowledge: Evidence From a Randomized Controlled Trial in Ethiopia." *Health economics* 26.11 (2017): 1394-1411.
- Asuming, Patrick Opoku, Hyuncheol Bryant Kim, and Armand Sim. Long-Run Consequences of Health Insurance Promotion: Evidence from a Field Experiment in Ghana. No. 11117. IZA Discussion Papers, 2017.
- Cohen, J. and P. Dupas. 2010. "Free Distribution or Cost-Sharing? Evidence from a Randomized

Malaria Prevention Experiment." *Quarterly Journal of Economics* 125 (1):1-45

- Cutler, David, and Grant Miller. "The role of public health improvements in health advances: the twentieth-century United States." *Demography* 42.1 (2005): 1-22.
- Miller, Grant, Diana Pinto, and Marcos Vera-Hernández. "Risk Protection, Service Use, and Health Outcomes under Colombia's Health Insurance Program for the Poor." *American Economic Journal: Applied Economics* 5.4 (2013): 61.
- Ashraf, Nava, James Berry, and Jesse M. Shapiro. "Can Higher Prices Stimulate Product Use? Evidence from a Field Experiment in Zambia." *American Economic Review* 100 (2010): 2383-2413.
- Miguel, Edward et. al. 2004. "Worms: Identifying Impacts on Education and Health in the Presence of Treatment Externalities." *Econometrica* 72 (1):159-217

Week 10-11. Education (5 Sessions)

[Articles] – will be modified

- Kim et al "The Role of Education Interventions in Improving Economic Rationality? *Science*, 2018
- Jensen, Robert. "The (perceived) returns to education and the demand for schooling." *The Quarterly Journal of Economics* 125.2 (2010): 515-548.
- Barrera-Osorio, F, Bertrand, M., Linden, L. L., & Perez-Calle, F. (2011). Improving the design of conditional transfer programs: Evidence from a randomized education experiment in Colombia. *American Economic Journal: Applied Economics*, 167-195.
- Duflo, Esther, Pascaline Dupas, and Michael Kremer. "Peer Effects, Teacher Incentives, and the Impact of Tracking: Evidence from a Randomized Evaluation in Kenya." *American Economic Journal: Applied Economics* 101 (2011): 1739-1774.
- Kremer, Michael, Edward Miguel, and Rebecca Thornton. "Incentives to learn." *The Review of Economics and Statistics* 91.3 (2009): 437-456.
- Banerjee, A. V., Cole, S., Duflo, E., & Linden, L. (2007). Remedying Education: Evidence from Two Randomized Experiments in India. *The Quarterly Journal of Economics*, 122(3), 1235-1264.
- Paul Schultz, T. "School subsidies for the poor: evaluating the Mexican Progresa poverty program." *Journal of Development Economics* 74.1 (2004): 199-250.
- Duflo, Esther. "Schooling and Labor Market Consequences of School Construction in Indonesia: Evidence from an Unusual Policy Experiment." *American Economic Review* 91.4 (2001): 795-813.
- Oster, Emily, and Bryce Millett Steinberg. "Do IT service centers promote school enrollment? Evidence from India." *Journal of Development Economics* 104 (2013): 123-135.
- Jensen, Robert. "Do Labor Market Opportunities Affect Young Women's Work and Family Decisions? Experimental Evidence from India." *The Quarterly Journal of Economics* (2012)
- Baird, Sarah, Craig McIntosh, and Berk Özler. "Cash or condition? Evidence from a cash transfer experiment." *The Quarterly Journal of Economics* (2011)

Exam 2 (Nov 22, 9:00-10:20am)

Week 12-13: Student Research Idea Presentation (Nov 24, 29)

Others

Academic Integrity Statement

Absolute integrity is expected of every HKUST student in all academic undertakings. Integrity entails a firm adherence to a set of values, and the values most essential to an academic community are grounded on the concept of honesty with respect to the intellectual efforts of oneself and others. Academic integrity is expected not only in formal coursework situations, but in all University relationships and interactions connected to the educational process, including the use of University resources. A HKUST student's submission of work for academic credit indicates that the work is the student's own. All outside assistance should be acknowledged, and the student's academic position truthfully reported at all times. In addition, HKUST students have a right to expect academic integrity from each of their peers. For further information regarding the HKUST Code of Academic Integrity (<http://ugadmin.ust.hk/integrity/regulations-1.html>) Unless you have the express permission of the instructor, you should not buy or sell course materials. Such unauthorized behavior constitutes academic dishonesty.

TurnItIn.com Acknowledgment

Students agree that by taking this course that all papers submitted for the course may be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site.

Disabilities

If you have a disability that requires accommodation, especially additional time for exams, please let me know as early as possible in the semester so that I can make arrangements. If you have any questions regarding this, please do not hesitate to contact me or speak to me directly.